THE ASTROPHYSICAL JOURNAL

Supplement Series

Founded in 1895 by George E. Hale and James E. Keeler

ROBERT C. KENNICUTT, JR.
Editor-in-Chief
Steward Observatory
University of Arizona

A. DALGARNO
Letters Editor
Harvard-Smithsonian
Center for Astrophysics

JAMES W. LIEBERT
Associate Editor-in-Chief
Steward Observatory
University of Arizona

EUGENE H. AVRETT
Deputy Letters Editor
Harvard-Smithsonian
Center for Astrophysics

Scientific Editors

GREGORY D. BOTHUN
University of Oregon

GEOFFREY BURBIDGE
University of California,
San Diego

BERNARD M. HAISCH
California Institute for
Physics and Astrophysics
Palo Alto

ERIC HERBST
Ohio State University

JOHN P. HUCHRA
Harvard-Smithsonian
Center for Astrophysics

JOHN T. MARISKA
Naval Research
Laboratory

FULVIO MELIA
University of Arizona

STEVEN N. SHORE
Indiana University
South Bend

EDWARD M. SION
Villanova University

CHRISTOPHER SNEDEN
University of Texas

F. W. STECKER
NASA/Goddard Space
Flight Center

JOHN H. THOMAS
University of Rochester

ETHAN T. VISHNIAC
Johns Hopkins University

STEVEN P. WILLNER
Smithsonian Astrophysical
Observatory

AAS PUBLICATIONS BOARD

BRUCE G. ELMEGREEN (1999–2002), *Chairperson*
IBM TJ Watson Research Center

ALYSSA A. GOODMAN (1998–2001)
Harvard University

JOEL E. TOHLINE (1999–2001)
Louisiana State University

RONALD E. TAAM (1999–2002)
Northwestern University

JEAN TURNER (2000–2003)
University of California, Los Angeles

RAYMOND CARLBERG (2000–2003)
University of Toronto

MICHAEL F. A'HEARN (2001–2004)
University of Maryland

Publication Manager: JULIE STEFFEN

Production Manager: CAROLYN CHMIEL

Chief Manuscript Editor: GERALDINE BRADY

Manuscript Editors: WALTER G. GLASCOFF III, BETH GARRISON, THAD A. DORIA, PAUL RUICH, SHARON JENNINGS, ELIZABETH HUYCK, ERIC SHUTT, KATHRYN KRAYNIK, RACHEL L. DRZEWICKI, ROCHELLE COHEN LODDER, NORA HOSTETLER, JEREMY HORSEFIELD, KERRY TUPPER, BENJAMIN D. STONE, KEVIN S. BECK, AND ALISON COMPTON

Production Staff: CINDY GARRETT, TIMOTHY HARPER, CECILIA HILGEMAN, ANJELICA SLOAN, MIKKI SMITH, LYVETTE MARSH, ASHLEY TOWNE, GREG GILLAM, URMI BHOWMIK, AND JAMES CAVICCHIA

Tucson Editorial Office: JANICE SEXTON, CANDACE M. HAUSER, AND GREGORY SCHWARZ

VOLUME 132

2001 JANUARY AND FEBRUARY

PUBLISHED BY THE UNIVERSITY OF CHICAGO PRESS FOR
THE AMERICAN ASTRONOMICAL SOCIETY

© 2001 BY THE AMERICAN ASTRONOMICAL SOCIETY. ALL RIGHTS RESERVED.

PUBLISHED MONTHLY

COMPOSED BY SANTYPE INTERNATIONAL LIMITED, SALISBURY, ENGLAND
PRINTED BY THE MACK PRINTING GROUP
EASTON, PENNSYLVANIA, U.S.A.

THE ASTROPHYSICAL JOURNAL

CONTENTS OF VOLUME 132

2001 JANUARY, NUMBER 1

	Page
ASYMMETRIC BEAMS IN COSMIC MICROWAVE BACKGROUND ANISOTROPY EXPERIMENTS *J. H. P. Wu, A. Balbi, J. Borrill, P. G. Ferreira, S. Hanany, A. H. Jaffe, A. T. Lee, S. Oh, B. Rabii, P. L. Richards, G. F. Smoot, R. Stompor, & C. D. Winant*	1
STRÖMGREN PHOTOMETRY FROM $z = 0$ TO $z \approx 1$. I. THE METHOD *Susanna Steindling, Noah Brosch, & Karl D. Rakos*	19
OPTICAL CLASSIFICATION OF SOUTHERN WARM INFRARED GALAXIES *L. J. Kewley, C. A. Heisler, M. A. Dopita, & S. Lumsden*	37
MULTIBAND OPTICAL POLARIMETRY OF THE BL LACERTAE OBJECT PKS 2155−304: INTRANIGHT AND LONG-TERM VARIABILITY *L. Tommasi, R. Díaz, E. Palazzi, E. Pian, E. Poretti, F. Scaltriti, & A. Treves*	73
TOTAL VARIATION DIMINISHING SCHEME FOR RELATIVISTIC MAGNETOHYDRODYNAMICS *Dinshaw Balsara*	83
EMISSION-LINE RATIOS FOR [N II] IN GASEOUS NEBULAE AND A COMPARISON BETWEEN THEORY AND OBSERVATION *F. P. Keenan, F. L. Crawford, W. A. Feibelman, & L. H. Aller*	103
TEMPORAL AND SPATIAL GAIN CORRECTIONS FOR THE *ROSAT* PSPC *S. L. Snowden, T. J. Turner, & M. J. Freyberg*	107
ELECTRON IMPACT EXCITATION COLLISION STRENGTHS FOR Fe X *S. S. Tayal*	117
ERRATUM A THREE-POSITION SPECTRAL LINE SURVEY OF SAGITTARIUS B2 BETWEEN 218 AND 263 GHz. II. DATA ANALYSIS *A. Nummelin, P. Bergman, Å. Hjalmarson, P. Friberg, W. M. Irvine, T. J. Millar, M. Ohishi, & S. Saito*	127

2001 FEBRUARY, NUMBER 2

AN ULTRAVIOLET/OPTICAL ATLAS OF BRIGHT GALAXIES *Pamela M. Marcum, Robert W. O'Connell, Michael N. Fanelli, Robert H. Cornett, William H. Waller, Ralph C. Bohlin, Susan G. Neff, Morton S. Roberts, Andrew M. Smith, K.-P. Cheng, Nicholas R. Collins, Gregory S. Hennessy, Jesse K. Hill, Robert S. Hill, Paul Hintzen, Wayne B. Landsman, Raymond G. Ohl, Ronald A. Parise, Eric P. Smith, Wendy L. Freedman, Leslie E. Kuchinski, Barry Madore, Ronald Angione, Christopher Palma, Freddie Talbert, & Theodore P. Stecher*	129
JET DIRECTIONS IN SEYFERT GALAXIES: RADIO CONTINUUM IMAGING DATA *H. R. Schmitt, J. S. Ulvestad, R. R. J. Antonucci, & A. L. Kinney*	199
A GRID OF COMPOSITE MODELS FOR THE SIMULATION OF THE EMISSION-LINE SPECTRA FROM THE NARROW-LINE REGIONS OF ACTIVE GALAXIES *M. Contini & S. M. Viegas*	211
HYDROGENATION AND CHARGE STATES OF PAHs IN DIFFUSE CLOUDS. I. DEVELOPMENT OF A MODEL *Valéry Le Page, Theodore P. Snow, & Veronica M. Bierbaum*	233
INTERSTELLAR MATTER NEAR THE PLEIADES. V. OBSERVATIONS OF Na I TOWARD 36 STARS *Richard E. White, Christopher L. Allen, Wendy B. Forrester, Anne M. Gonnella, & Kathryn L. Young*	253
A LINE SURVEY OF ORION-KL FROM 607 TO 725 GHz *P. Schilke, D. J. Benford, T. R. Hunter, D. C. Lis, & T. G. Phillips*	281

Page

IN-ORBIT PERFORMANCE OF THE SPACE TELESCOPE NINA AND GALACTIC COSMIC-RAY FLUX MEASUREMENTS 365
V. Bidoli, A. Canestro, M. Casolino, M. P. De Pascale, G. Furano, A. Iannucci, A. Morselli, P. Picozza, E. Reali, R. Sparvoli, A. Bakaldin, A. Galper, S. Koldashov, M. Korotkov, A. Leonov, V. Mikhailov, A. Murashov, S. Voronov, M. Boezio, V. Bonvicini, R. Cirami, A. Vacchi, N. Zampa, M. Ambriola, R. Bellotti, F. Cafagna, F. Ciacio, M. Circella, C. De Marzo, O. Adriani, P. Papini, S. Piccardi, P. Spillantini, S. Straulino, S. Bartalucci, G. Mazzenga, M. Ricci, & G. Castellini

CORRELATED X-RAY SPECTRAL AND TIMING BEHAVIOR OF THE BLACK HOLE CANDIDATE XTE J1550−564: A NEW INTERPRETATION OF BLACK HOLE STATES 377
Jeroen Homan, Rudy Wijnands, Michiel van der Klis, Tomaso Belloni, Jan van Paradijs, Marc Klein-Wolt, Rob Fender, & Mariano Méndez

OSCILLATOR STRENGTHS OF TRANSITIONS IN Ti II IN THE VISIBLE AND ULTRAVIOLET REGIONS 403
J. C. Pickering, A. P. Thorne, & R. Perez

ERRATUM
ATOMIC DATA FOR RESONANCE ABSORPTION LINES. II. WAVELENGTHS LONGWARD OF THE LYMAN LIMIT FOR HEAVY ELEMENTS 411
Donald C. Morton

INDEX i